

BACKGROUND

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Creating a “Space Corps” Is Not the Solution to U.S. Space Problems

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Abstract

The House of Representatives has proposed legislation in its version of the National Defense Authorization Act (NDAA) for a separate service under the Secretary of the Air Force called the Space Corps. The Senate has approved its own version of the NDAA that prohibits creation of a Space Corps. In the eyes of space advocates, a Space Corps would remedy four ailments that have effectively put the United States space warfare capabilities behind those of China and Russia: (1) organization, (2) funding, (3) acquisition, and (4) leadership development. While it is easy to target the Air Force, that Service’s stewardship is not the cause for the loss of U.S. space dominance. That loss is directly attributable to the number of co-equal services, departments, and agencies that refuse to cede direction, much less command-and-control authority, to any other—and to years of underfunding the Department of Defense (DOD). The benefits of a Space Corps (a fifth service within the DOD) would be minimal at best, and would be dwarfed by the personnel and infrastructure costs. Such a reorganization would likely cause a disruption of engagement and coordination within the four services and the combatant commanders while the nation is at war. Congress should force the streamlining of the command-and-control structure of the U.S. space community and bolster its warfighting posture, but it should not create a new service.

Should the United States establish a Space Corps? The Strategic Forces Subcommittee of the House Armed Services Committee has proposed just that—a fifth service of the Department of Defense (DOD). If the House version of the National Defense Authorization Act (NDAA) for 2018 became law, the Space Corps chief of staff

KEY POINTS

- The loss of U.S. momentum in space is due to underfunding and a slow-to-evolve mindset within the Defense Department. Reorganizing the Air Force will not change that.
- Years of underfunding of the DOD has hurt the readiness levels of every service. Space is arguably the healthiest of all Air Force components.
- Space assets are critical, expensive, and vulnerable. While the loss of a satellite or network should not cause the U.S. to cede a yard of territory, control of the sea around it or the sky above it, the fragile nature of space-based assets, and near-total U.S. reliance on this domain present a systemic and dangerous vulnerability.
- The U.S. employs space assets more effectively than any other nation; but until it secures the funding to regain momentum in all domains, it must be prepared to fight without dominance in any of them.

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would wield the same weight as, and compete with, the Chief of Naval Operations, the Chiefs of Staff for the Army and the Air Force, and the Commandant of the Marine Corps for funding within the DOD's very limited budget.

Representative Mike Rogers (R-AL), chairman of the Strategic Forces Subcommittee, and one of the two sponsors for the Space Corps initiative, highlights four major issues that this initiative would ostensibly fix: (1) organization, (2) funding, (3) acquisition, and (4) leadership development.

While Representative Rodgers is correct that the space community faces severe challenges, establishing a Space Corps as a separate service would be a mistake.

1. Space Organization

During a recent symposium, Representative Rogers pointed out that the Air Force has 90 percent of the nation's unclassified space assets, and receives 90 percent of the funding for space within the DOD.¹ He pointed to 60 unnamed entities, organizations, and individuals that control or are connected to these space assets inside and outside the DOD, and to the fact that there is no wiring diagram that shows the relationships or lines of authority among them. Of the 60 space "stakeholders," most are passengers on the bus that other (space) entities drive.²

The Army and Navy own the remaining 10 percent of space assets, but they and the Air Force are not the only major voices that set the direction for U.S. capabilities in space. That direction is also determined by three task-associated groups, which deal with space requirements, space acquisition management, and space oversight.

Six different entities within the DOD define separate requirements for meeting separate service or department agendas. There is no single, coordinated structure for defining space requirements within the DOD. Acquisition management for those requirements is even more diverse. Eight different organiza-

tions (seven Army, Navy, and Air Force entities, plus the National Reconnaissance Office (NRO)) manage acquisition that is coordinated through, but not controlled by, the Secretary of the Air Force. Eleven different organizations or bodies are charged with oversight—none of which is in control, or able to set the direction, map the course, or build the overarching strategy for U.S. space capabilities.

The Secretary of the Air Force acts as the Principal DOD Space Advisor (PDSA) for those 11 entities, but unfortunately does not direct or control oversight of U.S. space programs, merely shepherding the direction voted on by this group.

Of the 25 organizations that shape and govern the direction, focus, and acquisition strategy of U.S. space assets, 22 (88 percent) are outside the "wired" Air Force command-and-control structure.³ The legislation proposed in the House version of the NDAA would not consolidate, change the composition, or streamline that command-and-control structure in any way.

The assets within the DOD could be included in the House's proposed Space Corps, but they are not. Even if they were, the services, departments, and agencies would still need an internal organization to coordinate the DOD space support requirements, which means that some form of those organizations would remain.

As written, this legislation would have no impact on any organization other than the Air Force, which would not suffice to change the space landscape. It would not streamline the current command-and-control malaise, nor reduce the number of cooks in the space kitchen by a single organization. This new service would give the appearance of a single "belly button" for space, but the reality would be significantly different. Reorganization would not give the Space Corps any more control over the involved assets and agencies, nor would it minimize the associated bureaucratic coordination in any way.⁴

1. "How to Organize Military Space," Center for Strategic & International Studies, September 6, 2017, <https://www.csis.org/events/how-organize-military-space> (accessed September 27, 2017).

2. Cristina Chaplain, "DOD Space Acquisition Management and Oversight," Government Accountability Office, July 27, 2016, p. 19, www.gao.gov/assets/680/678697.pdf (accessed September 26, 2017).

3. The three Air Force organizations are the office of the Secretary of the Air Force (SECAF), the Air Force Space Command, and the Space and Missile Systems Center.

4. Deputy Assistant Secretary of the Air Force for Budget, "United States Air Force Fiscal Year 2016 Budget Overview," p. 3, <http://www.saffm.hq.af.mil/Portals/84/documents/FY16/AFD-150202-045.pdf?ver=2016-08-24-100152-050m> (accessed September 26, 2017).

2. Space Funding

During a recent presentation, the Honorable Deborah James, former Secretary of the Air Force, touched on two different funding streams for space—one unclassified, and one she could not discuss (presumably classified).⁵ In fiscal year (FY) 2016, the Air Force budget was \$165.3 billion, of which only \$2.2 billion was for procurement of space assets, and a mere \$1.2 billion was for space research, development, test, and evaluation (RDT&E). Within that same budget, \$10.8 billion was programmed for procuring aircraft, and \$3.5 billion was programmed for aircraft RDT&E—an arguably disproportionate level of funding between the Air Force’s air assets and space assets.⁶ What is not brought up by proponents of an independent Space Corps are the classified budget numbers. While those outside Congress and classified agencies cannot know where the \$4.2 billion in classified RDT&E identified with the Air Force budget is applied, some of it undoubtedly goes to space. That is just the tip of the iceberg.

Proponents of the Space Corps point to a small (unclassified) budget for space acquisition and RDT&E, and the loss or cancellation of programs like the Transformational Satellite Communications System (TSAT), Space Radar, National Polar-orbiting Operational Environmental Satellite system (NPOESS), and similar programs as evidence of poor Air Force stewardship of space. Space Corps proponents claim that the brunt of the budget cuts suffered by the Air Force have been directed toward its space program, but here again, even a cursory look at the numbers does not support that supposition. Of the \$167.3 billion Air Force budget for FY 2016, only \$122.2 billion was for “blue” (moneys programmed for the Air Force) operations and maintenance, personnel, procurement, and RDT&E.⁷ Classified acquisition and support for programs within the Air Force, NRO, National Geospatial-Intelligence Agency (NGA), and joint space systems were funded by the remaining \$34.5 billion of that annual budget. While there are

certainly other programs within that funding stream, Air Force/joint/interagency space assets very likely received the lion’s share.⁸ If space received 70 percent of that classified budget (\$24.15 billion), total Air Force space procurement and RDT&E would equate to \$27.55 billion, exceeding aircraft procurement and RDT&E (\$14.3 billion) by almost a factor of two.

The DOD, not the Air Force, sets priorities for its budget and bases them on warfighter (combatant commander) requirements. The assets required to execute any operational war plan are very detailed, and the force composition, structure, and readiness levels that meet those wartime requirements weigh heavily into the funding requests that the Secretary of Defense sends to Congress.

During Robert Gates’ tenure as the Secretary of Defense, he envisioned and initiated a drawdown to a force structure close to today’s, and established a minimum funding level of \$700 billion a year to sustain it. The baseline DOD budget in FY 2016 was \$534.3 billion—\$165.7 billion short of the funding that Secretary Gates believed necessary to sustain the force. While an additional \$50.9 billion was added for overseas contingency operations (OCO), the majority of that funding was spent on the wars in Afghanistan, Syria, and Iraq.⁹ The \$165.7 billion shortfall is in line with shortfalls that the DOD has endured since 2012, which have left the services unable to maintain the manning, equipment, training, and overall readiness levels required of the conventional force structure.

Readiness levels have fallen to the point where even mundane peacetime operations are increasingly going awry. Navy ships are colliding with cargo vessels in relatively calm conditions, and aircraft mishap rates during benign training events are steadily climbing. There is not enough funding to give fighter pilots in any service even marginal levels of competence.

Historically low funding shortfalls and readiness levels, coupled with the ease of Global Positioning

5. “How to Organize Military Space,” Center for Strategic & International Studies.

6. Deputy Assistant Secretary of the Air Force for Budget, “United States Air Force Fiscal Year 2016 Budget Overview,” p. 8.

7. Ibid.

8. Anne Daugherty Miles, “Intelligence Community Spending: Trends and Issues,” Congressional Research Service, November 8, 2016, p. 6, <https://fas.org/sgp/crs/intel/R44381.pdf> (accessed September 26, 2017).

9. Office of the Under Secretary of Defense (Comptroller), Chief Financial Officer, “U.S. Department of Defense Fiscal Year 2016 Budget Request: Overview,” February 2015, pp. 1 and 2, http://dcmo.defense.gov/Portals/47/Documents/Publications/Annual%20Performance%20Plan/FY2016_Performance_Budget.pdf (accessed September 26, 2017).

System (GPS) navigation and munitions employment have caused the services to all but scrap backup delivery options and basic (non-GPS-assisted) navigation training.¹⁰

The fight for every dollar within the DOD's FY 2016 \$534.3 billion budget, like each of the four previous years, has been intense. During this same period, funding for the current portfolio of space assets has allowed the U.S. to sustain an edge over any near-peer competitor through enhanced situational awareness, as well as the unrivaled ability to find, fix, target, and engage that enemy with precision munitions. Given the reported readiness of fighter, strike, and other assets, an argument could be made that of all of the components within the Air Force, the Air Force Space Command (AFSPC) is the healthiest. With that in mind, it is hard to argue how a Space Corps chief of staff could fight for and receive more funding than the Air Force has been able to provide under the Budget Control Act (BCA). That said, U.S. reliance on GPS for air, land, and sea maneuver, targeting, and engagement is near universal, which exposes a critical vulnerability our adversaries are moving to engage.

China and Russia are investing heavily in ground-based anti-satellite (ASAT) missiles and orbital ASAT programs that may deliver a kinetic strike capability or co-orbital robotic interference that can alter signals, mask denial efforts, or even pull adversary satellites necessary for surveillance, navigation, and targeting out of orbit.¹¹ If an aggressor nation were able to degrade regional GPS signals to the point of neutralizing the reliant systems, the U.S. would be forced to rely on classic means of navigation and backup methods of putting ordnance on target—neither of which is being practiced by any service today.

The capability that U.S. satellites provide to find, fix, and engage an enemy is unrivaled, but those assets were designed in an era before offensive space systems (ASAT missiles, mines, and lasers) were considered to be a threat. The investment required to replace the current portfolio of U.S. satellites with resilient systems will be costly, take decades to manifest, and will require a different mindset than the one still prevalent in the DOD.

Gaining a Warfighting Mindset. Space has grown more and more contested over the years, and there is little question that the U.S. is lagging behind its adversaries when it comes to offensive or defensive counter space capabilities. The Air Force has recognized this and taken significant steps to change that paradigm. The Air Combat Command established a space division within its weapons and tactics instructor course at Nellis Air Force Base in Nevada in 1996, and rising leaders within the Air Force space community have been writing on space warfighting concepts and the need for armed space assets for decades. That mindset needs to be embraced by all six DOD entities that define space requirements, as well as those tasked with acquisition and oversight. And, Congress must fund the DOD at a level that allows it to begin vigorously fielding that capability.

Russian and Chinese efforts to offensively engage U.S. space-borne assets are a serious threat to the U.S. network of space systems, however, there are no known space-borne assets that possess the ability to engage an adversary's terrestrial assets with either pulsed energy or kinetic munitions. Even if there were, the number of "shots" they could use to kinetically impact a terrestrial battle would likely be very limited due to the cost of putting munitions into space, and the challenges of resupply. With that, the loss of a single satellite, much less an entire constellation, could have onerous implications for U.S. military operations, but it should not cause the U.S. to cede a yard of territory, control of the sea around it, or the sky above it. There is little doubt that the U.S. needs more funding for space, but the kinetic assets required to defeat an earthbound adversary that can take and hold territory must continue to take precedence in a BCA-constrained DOD budget—no matter how many service chiefs of staff there are.

One final accusation levied at the Air Force is that it is somehow siphoning funds from space to use on other more-favored programs, but there is little evidence to support that claim. Every penny the Air Force receives is dictated by Congress. The Air Force cannot move (reprogram) more than \$10 million a year (cumulative) for procurement, no more than \$20 million (cumulative) for operations and main-

10. John Venable, "Independent Capability Assessment of U.S. Air Force Reveals Readiness Level Below Carter Administration Hollow Force," Heritage Foundation *Background* No. 3208, April 17, 2017, p. 10, <http://www.heritage.org/defense/report/independent-capability-assessment-us-air-force-reveals-readiness-level-below-carter>.

11. *Ibid.*

tenance, and no more than \$4 million (cumulative) a year for RDT&E without informing Congress.¹² While there is little hope that a Space Corps would achieve greater funding levels for U.S. space assets, there is promise within the House NDAA language for an improved outlook for acquisition.

3. Space Acquisition

Moving the F-35 fighter and KC-46 next-generation air-refueling aircraft programs from the drawing board to the flight line are two examples of just how challenging and cumbersome the acquisition process is for any program of record. Congress, the services, and dependent agencies are constantly calling for reform, but the process has only been shaped around the edges. The House version of the NDAA proposes a useful step that would help space acquisition accelerate procurements by granting the Secretary of the Air Force Milestone Decision Authority (MDA) for space acquisition programs, including RDT&E and procurement.¹³ This authority would help process on the back side of acquisition bring space systems to fruition faster for the United States, but there is no reason that same authority could not be given to the Secretary now within the NDAA to invoke the same ends.

4. Space Leadership Development

The last of the major shortfalls that many proponents cite in their quest for a Space Corps is the pursuit of a cadre of highly competent joint space warriors. The Air Force realized the need for a space developmental path many years ago when it established the AFSPC and put a four-star general in charge. Only recently have non-rated officers who were raised within the space and missile community taken the helm of the AFSPC—but the developmental path within that organization is now well established.

Each of the career specialty tracks within the Air Force is framed, guided, and theoretically capped in grade by the senior ranking officer within that career field. The senior ranking officers in other specialties, such as security forces and the medical community, are shepherded by officers with markedly lower grades. The AFSPC is run by a four-star general with

just 38,000 personnel. Air Combat Command (possessing the vast majority of tactical aircraft) has 68,000 and is also run by a four-star general. The Air Education and Training Command, run by a three-star general, has 48,000 personnel, and the Air Force Surgeon General tops out with a three-star general. There is always room for improvement and tweaks to the promotion and school selection process, but if a four-star general is not able to affect a healthy space career path inside the Air Force, the question must be asked: How much better will that same general do at the helm of a Space Corps?

Chairman Rogers recently pointed out that the Air Force Air Command and Staff College's 450-plus hours of intermediate-service school instruction dedicate a mere two of those hours to space operations. It would be surprising to find that much time specifically dedicated to fighter, bomber, or tanker operations due to the integrated nature of this school, but the argument opens up a discussion on the cost and bureaucratic weight that would come by adding a fifth service.

Each of the four services within the DOD has levels of headquarters and staff, and each fields a robust headquarters staff within or around the Pentagon to support the respective chiefs. The Space Corps chief of staff would need a deputy of the same grade who can sit on and fight for service equities within the Joint Requirements Oversight Council. Unlike what many believe, the personnel required to man the supporting staff would not be a zero-sum exercise. Professionals pulled from AFSPC headquarters and from the current Air Staff would need to be replaced in order for those staffs to continue to function. A Space Corps headquarters alone would require at least 500 more people just to administer this new service. As a point of reference, the Army has at least 3,000 personnel on its service headquarters staff, so the numbers presented here are an absolute low ball.

In addition to that new demand for personnel, all four services have developmental schools for company grade, intermediate, and senior service personnel that require facilities, manpower, and budgets to fund the associated infrastructure. Add in another 500 personnel for those school instructors and sup-

12. *DoD Financial Management Regulation*, Vol. 3, Chapter 6, May 2015, p. 6-3, http://comptroller.defense.gov/Portals/45/documents/fmr/archive/03arch/03_06.pdf (accessed September 26, 2017).

13. National Defense Authorization Act for Fiscal Year 2018, Report of the Committee on Armed Services, House of Representatives, H.R. 2810, July 6, 2017, p. 267, <https://www.gpo.gov/fdsys/pkg/CRPT-115hrpt200/pdf/CRPT-115hrpt200.pdf> (accessed September 26, 2017).

porting staff, and the increased cost for personnel currently not on the DOD books would equate to an additional budget requirement at least \$160 million per year.¹⁴ That does not even include the potential demand for a Space Corps Service Academy, new uniforms, and a dozen other areas for real DOD cost growth.

Conclusion

Congress should:

- **Remove the initiative to create a Space Corps from the 2018 NDAA**, but retain instructions to give the Secretary of the Air Force MDA for space acquisition, RDT&E, and procurement.
- **Increase DOD funding in FY 2019, funding it with at least \$632 billion in 2018, with healthy increases in the following years**, and continue to allow the Secretary of Defense to define the priority of how those funds are expended, holding him accountable for results in all aerospace domains.
- **Increase pressure on the Air Force, its sister services, and the other major space agencies to streamline** the command-and-control structure, further develop space warfighting capabilities, and refine space leadership development.

Friction within a system can often be very healthy, and it is obvious that the organizations that own and control U.S. space assets could use a healthy dose of it. The United States needs to stay ahead of its adversaries and potential competitors. In order to do that,

the U.S. must transform its traditional operating model, which, despite the large spending advantage it enjoys, has not given the U.S. the confidence of a corresponding strategic leadership position. Congressional attention on the Air Force and the other major space agencies to streamline the command-and-control structure, further develop space warfighting capabilities, and refine space leadership development will help to resolve many of the woes currently holding the U.S. back from retaking the initiative in space. But nothing will fill in the capability gaps, or accelerate U.S. efforts in space, more than Congress giving the Air Force (and all services) the funding it needs to do so.

The Air Force became its own service in 1947, two years after the cessation of hostilities in World War II, and almost three years before hostilities began on the Korean Peninsula. The military was not engaged in combat at any level, nor was there the perception of a looming fight on the horizon—a markedly different time from today. The 2018 House version of the NDAA would levy a heavy financial cost on the DOD at a time when its budget could not be more anemic, and the continual demand on the services has worn them thin. The turmoil associated with standing up a new service while the associated assets are supporting ongoing combat operations in Afghanistan, Iraq, and Syria would be unwise. The benefits of a Space Corps at any point on the foreseeable horizon are minimal at best, but if there ever comes a time when the benefits outweigh the costs, this certainly is not it.

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14. Former Secretary of the Army Eric Fanning estimated that it costs \$1.6 billion per year for 10,000 additional Army troops; 1,000 additional staff officers for the Space Corps would equate to one-tenth of that figure—\$160 million a year. Anthony Capaccio, “Trump’s Bigger Army Could Cost \$412 Billion by Fanning’s Math,” Bloomberg, January 19, 2017, <https://www.bloomberg.com/news/articles/2017-01-19/trump-s-bigger-army-could-cost-12-billion-by-fanning-s-math> (accessed September 26, 2017).